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(71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(71) Applicant (for AE only): U.S. PHILIPS CORPORATION [US/US]; 1251 Avenue of the Americas, New York, NY 10510-8001 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): GRAESSLIN, Ingmar [DE/NL]; P.O. Box 220, NL-5600 AE Eindhoven (NL). EGGERSS, Holger [DE/NL]; P.O. Box 220, NL-5600 AE Eindhoven (NL).

(74) Common Representative: KONINKLIJKE PHILIPS ELECTRONICS N.V.; c/o LUNDIN, Thomas, M., 595 Miner Road, Cleveland, OH 44143 (US).

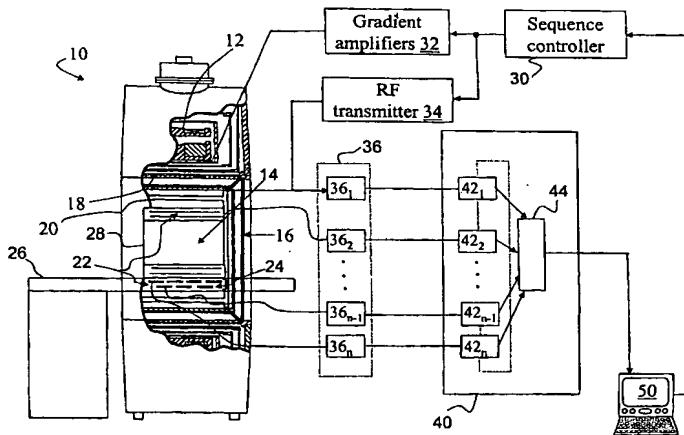
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(54) Title: EFFICIENT MAPPING OF RECONSTRUCTION ALGORITHMS FOR MAGNETIC RESONANCE IMAGING ONTO A RECONFIGURABLE RECONSTRUCTION SYSTEM



(57) Abstract: A magnetic resonance (MR) system (10) includes radiofrequency (RF) transmitters (34) which send RF pulses into an examination region (14) to excite a spin system to be imaged. Coil elements (20, 24, 28) pick up an MR signal, which is demodulated and converted into digital data by RF receivers (36). A plurality of independent parallel processing channels (42<sub>1</sub>, 42<sub>2</sub>, ..., 42<sub>n</sub>) is operatively connected to the RF receivers to reconstruct images from the digital data. The parallel processing channels (42<sub>1</sub>, 42<sub>2</sub>, ..., 42<sub>n</sub>) include one or more pipeline stages (54<sub>1</sub>, 54<sub>2</sub>, ..., 54<sub>m</sub>). Processing channels and pipeline stages include a plurality of processing or reconstruction units (52). Processing tasks are dynamically allocated to these processing or reconstruction units on a per scan basis using a single general strategy for mapping processing tasks to hardware resources. The connections (56) between the processing or reconstruction units (52) are reconfigured using a switching means (60). In this manner, different numbers of coil elements (20, 24, 28) can be connected with matching numbers of processing channels (42<sub>1</sub>, 42<sub>2</sub>, ..., 42<sub>n</sub>) to exploit available processing resources optimally.



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*